

Physics 11: Work and Energy

1. Physicists classify energy into two types -----, and -----.
2. ----- is energy that is stored.
3. Kinetic energy is energy of -----.
4. A ----- does work on an object if it causes the object to -----.
5. Work is not energy itself but a ----- of mechanical energy.
6. Mechanical energy is a combination of ----- and -----.
7. In order for work to occur, the force and displacement must be -----.
8. Work is measured in -----.
9. A **Nm** is a -----.
10. Therefore a **Joule** is one -----.
11. The definition of work applies to an ----- force not a net -----.
12. Work done is zero when -----, -----, and -----.
13. Does the Earth's gravity do work on the moon? Explain.
14. A ----- vs----- graph lets you solve for work even if the force does not remain -----.
15. When a force is applied at an angle, only the ----- component is parallel to the motion.
16. The trig ratio involved in this calculation is -----.
17. ----- work adds energy to an object, while ----- work removes energy.
18. For negative work to occur, the force and distance vectors are in ----- directions to each other.
19. ----- and ----- contribute to the kinetic energy of an object.
20. Doing work on an object gives it -----.
21. This is the bases for the ----- ----- theorem.
22. By doing work against gravity an object gains ----- energy.
23. Potential energy is energy ----- by an object due to its -----.
24. -----, ----- and ----- contribute to the gravitational potential energy of an object.
25. Elastic potential energy is stored in objects that can -----, -----, or -----.
26. The ----- ----- causes an object to return to its original position after being stretched of compressed.
27. This position is called -----.
28. ----- Law defines this phenomenon.
29. Every elastic object is defined by its ----- -----.
30. This variable has units of -----.
31. The restoring force acts in the ----- direction of the applied force.
32. The area under an ***F vs x*** graph gives the -----.
33. ----- and ----- contribute to the elastic potential energy of an object.
34. ----- is the rate at which work is done.
35. It is measured in -----.

36. A **Watt** is equivalent to a -----.
37. As energy is converted into a useable form, much can be lost in the form of -----.
38. The ----- of a machine describes the extent to which this happens.
39. ----- forces are reversible, while ----- forces aren't.
40. A conservative force is ----- of the path taken, while non-conservative forces are ----- of the path taken.
41. Energy cannot be ----- or -----.
42. Energy can be ----- to other forms.
43. The law of ----- says the total mechanical energy before and after a process are the -----.
44. When a mass oscillates on a spring, **A** represents the -----.
45. A mass at full extension or compression has a velocity of -----.
46. Maximum velocity of a mass on a spring occurs at -----.
47. The total energy at any point of a mass oscillating on a spring is ----- plus -----.
48. An ----- force is exerted within a system.
49. An ----- force comes from outside a system.
50. An open system exchanges ----- and ----- with the environment.
51. A closed system exchanges only -----.
52. An isolated system does not exchange ----- or -----.
53. Work done by ----- forces do not lose energy to heat, while work done by ----- forces do.
54. This is because ----- forces depend on the ----- taken, so heat is lost to -----.